

Title (en)

DATA STATE-BASED TEMPERATURE COMPENSATION DURING SENSING IN NON-VOLATILE MEMORY

Title (de)

AUF DATENSTATUS BASIERENDE TEMPERATURKOMPENSATION WÄHREND DES LESENS IN EINEM NICHTFLÜCHTIGEN SPEICHER

Title (fr)

COMPENSATION DE TEMPÉRATURE À BASE D'ÉTAT DE DONNÉES AU COURS DE LA DÉTECTION DANS UNE MÉMOIRE NON VOLATILE

Publication

EP 2332146 B1 20140305 (EN)

Application

EP 09792382 A 20090909

Priority

- US 2009056405 W 20090909
- US 23395008 A 20080919

Abstract (en)

[origin: US2010074014A1] Temperature effects in a non-volatile storage device are addressed by providing a data state-dependent, and optionally temperature dependent, sense current during verify and read operations. A different sense current is provided for each data state, so that a common temperature coefficient is realized for storage elements with different data states. The temperature coefficient for higher states can be reduced to that of lower states. During sensing, a sense time can be adjusted to achieve a desired sense current when a selected storage element is in a conductive state. A fixed voltage trip point may be maintained. During the sense time, a pre-charged capacitor discharges into a selected storage element such as via a bit line and NAND string, when the selected storage element is in a conductive state. The discharge level is translated to a current which is compared to a state-dependent, and optionally temperature dependent, reference current.

IPC 8 full level

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CPC (source: EP US)

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